

1.

Spring 1866.

- x 4633. Among shaded rocks, creeping Petaluma 11/4
- 4634 Dry hillsides Mendocino Co 12/4
- 4635. Carex. Borders of rionlets Petaluma 11/4
- x 4636 Dry hillsides Ukiah Mendocino Co
- x 4637 Dry woods on gravelly soil 14/4 Ukiah.
- x 4638 Carex. Mill-Creek Ukiah 15/4
- x 4639 x Gravelly soil in open woods Ukiah
- x , , Banks of Mill-Creek, common,
the large leaved form I could find nowhere
at this season save one or two specimens
- 4641 Swampy places Ukiah
- x 4642 Open-woodlands Uk.
- 4643 Open-woodlands "
- x 4644 Sanicula tuberosa Ukiah
- Open woodlands in gravelly soil. A
common species in such localities in the foot-
hills of the adjoining Sacramento Valley
- 4645 In wet places Ukiah 14/4
- 4646 Juncus, moist fields Ukiah 18/4
- x 4647 Shaded woods Ukiah
- x 4648 Agrostis Dry hills Uk.
- x 4649 Open woods Uk.
- 4650 Juncus. Divide of Albion and Russian
Rivers.
- x 4651 Open woods on gravelly soil 18/4 66.

- x 4652. On moist mossy rocks in Mill-Creek
 Ukiah - Leaves fleshy when fresh.
- x 4653 Dry hillsides Ukiah 14/4 66 (scattered)
- x 4654 Moist meadows hillsides near Ukiah
- x 4655 Meadows Ukiah
- 4656 Swamps (found the same in the higher
 Sierras) near Ukiah (but always much dispersed)
- 4657 Moist banks Ukiah
- 4658 Callitriche, wet places Uk.
- 4659 Dry hillsides Ukiah 18/4
- 4660 Dry hillsides " "
- x 4661 Whipples modesta (borders of Redwoods)
- 4662 In dry roads near Ukiah.
- x 4663 Near Ukiah 18/4
- x 4664 Wet meadows Ukiah
- 4665 Among grain Petaluma 18/4
- x 4666 In wet meadows Ukiah 18/4
- 4667 In moist places Ukiah "
- x 4668 In dry loose soil Uk. 19/4
- x 4669 Dry gravelly soil Russian River Valley
- 4670 Viola, Shady creek-banks Sherwood
 Valley Mendocino Co.
4671. Achlys triphylla common in the northern
 Redwoods.
- 4672 Little Lake-Valley near ditches.
- x 4673 Dry hillsides Russian R. Valley
- x 4674 Very common along creeks in Long Valley
- x 4675 Shady hillsides Long Valley Mendocino
 Co.

- 4676 Shady hillsides Long Valley.
- 4677 Wet places, dispersed, (odoriferous like *Viola odorata*) Long Valley. (Purple)
- 4678 Dry hillsides Russian R. Valley
- 4679 Dry hillsides " " " "
- A very common species in the foot hills adjoining east & west Sacramento Valley. It grows generally in large patches.
- 4680 Rocks in Round Valley. 29/5
- 4681 Hillsides Long Valley
- 4682 ⁱⁿ Open Wood (cream-colored) Long Valley.
- 4683 Open Wood (hills) Long Valley.
- 4684 Gravelly little flats Long Valley.
- 4685 Damp woods Long Valley.
- 4686 Damp Wood and banks Long Valley
- 4687 Damp Creek-banks Long Valley.
- 4689 Carex. Swamps at Cakto Long Valley
Plumose
- 4690 Moist flats Long Valley.
4691. Juncus. Moist flats, Long Valley
- 4692 Stipa, El River Round Valley
- 4693 Dry hillsides Round Valley.
4694. Dry hillsides R. Valley.
- 4695 Dry hill sides " " "
4696. Wooded hillsides Long Valley
the finest species met with yet, flowers of a very delicate pink-color - large and showy
- 4697 Carex. Long Valley

- 4698 *Melica Mendocina* City.
 4699 Round Valley on Dry hills
 4700 *Carex* 11/5 Meadows Mendocino City.
 4701. *Carex*. Swamps Mendocino City
 4702 *Carex*. Swamps " " "
 4703 Round Valley, quite common,
 4704 *Festuca* Dry shady hillsides Mendocino
 4705 *Poa* Mendocino plains 11/5
 4706 Redwoods Mendocino (Sometimes white)
 4707 Flowers large, Open wood, Long Valley
 Roots eaten by the Indians
 4708 Flowers bright red. Open wood, Long Valley
 4709 Redwoods, common.
 4700 Swampy places Long Valley
 4711. *Salix* Red-willows of the settlers
 flexible. Long Valley.
 4712. Dry hillsides Long Valley - Cakto
 4713 *Ceanothus*, Jackson Creek 8-12 feet
 high Jackson Valley Mendocino Co.
 4714 *Ceanothus* Coast Range alt. 3000—
 4715 The most general plant of the high hills
 on the Coast Range.
 4716 *Phleum*. Coast Mendocino
 4717 Plains of Mendocino.
 4718 Swamps at Noyo Mendocino Co.
 4719 *Viola* Redwoods at Noyo
 4720 *Luzula* Plains at Mendocino City
 4721. *Ceanothus* Hillsides Russian R. Valley.

- 4722. On sandy fields Noyo
- 4723. Sandy fields among shrubs. Noyo
- 4724. Redwoods at Long Valley
- 4725. Noyo and Mendocino Plains.
- 4726. Noyo " " " " "
- + 4727. Swamps at Mendocino Co. Coast.
- 4728. Redwoods high hills Mendocino Co.
- 4729. Swamps at Long Valley.
- 4730. Swamps " " "
- 4731. Shady hillsides Long Valley, common
- 4732. Dry hillsides, Eel River, Mendocino Co.
- 4733. Open woods, Eel River.
- 4734. Open plains at Noyo (leaves thick and succulent).
- 4735. Sea shore at Noyo. Leaves
- 4736. Shaded hillsides 20/4 Long Valley
- 4737. Meadows at Eel River Mendocino Co. also at Cloverdale Sonoma Co.
- 4738. Plains at Mendocino City
- 4739. Carex in Sphagnum swamps ^{1/5.} Mendocino City
- 4740. Carex " " " " " " "
- 4741. " " " " " " " "
- 4742. Galium, floating in ditches Mendocino City
- 4743. Galium on the plains around the ditches.

4744. In cultivated fields Mendocino.
 4745. Carex. Sphagnum swamps " " "
 4746. " " " " " "
 4747. " " Borders of thickets, common near Mendocino City. 10/5
 4748. Drosera, Sphag - Swamps Mendocino
 4749. In the plains of Mendocino City
 4750. Mendocino plains, 10/5
 4751. " " " "
 4752. " " " "
 4753. Bromus ciliatus Mendocino Plains in thickets.
 4754. Mendocino plains (two specimens only)
 4755. Sandy fields Mendocino
 4756. common in moist meadows.
 4757. " " " " "
 4758. Trisetum cernuum. In shady thickets Mendocino City. Russian Gulch.
 4759. Sandy plains Port Bragg. The flowers large blue, scarcely above the ground. (much of the aspect of Calchicum autumnale)
 4760. Wet meadows at Mendocino City
 4761. Meadows at El River
 4762. Calamagrostis. Wet places, Mendocino City
 4763. Juncus Wet places Mendocino City
 4764. Panicum dichotomum Plains " " "
 4765. Carex, dry meadows

4766. *Calamagrostis*. In the *Sphagnum* swamps on little flats, roots long and creeping, 4-8 inches high.
- 4767 *Juncus*. Swamps. Mendocino City
- 4768 Swamps " " " "
- 4769 Wet meadows " " " "
- 4770 Swamps " " " "
- 4771 Carex " " " "
- 4772 Trailing over large portions of land of the plains 10/5
- 4773 Salmon berry, thickets near the coast. in creek-bottoms.
- 4774 Thickets / Mendocino City
- 4775 Rocks-bluffs Mendocino " "
- 4776 *Sphagnum* swamps 11/5
- 4777 " " " "
- 4778 *Trisetum*, thickets, Mendocino City
- 4779 *Quercus densiflora* 12/5. This is the only oak growing west of the Redwoods.
- 4780 Alnus Swamps at Mendocino City
- 4781 Wet meadows 12/5 " " " "
- 4782 *Ceanothus* a very large shrub on the high hills of the coast range.
- 4783 Beach at Fort Bragg (leaves fleshy)
- 4784 Plains Mendocino City 8/5
- 4785 Damp Cañons Mendocino City 13/5
- 4786 *Trisetum* Woods " " "

- 4787 *Calamagrostis* Swamps Albin River
 4789 Plains at Mendocino City.
 4790 Sandy Plains near Little River
 4791. Swamp Gulches Mendocino City
 4792 " " " " " "
 4793 Sphag-swarms " " "
 4794. Common on the plains " "
 4795 Swamps at Fort Bragg. Common.
 4796 Gravelly soil Anderson Valley 18/5
 4797 " " " " " "
 4798 " " " " " "
 4799 " " " " " "
 4800 " " " " " "
 4801 *Agrostis* Meadows Anderson V.
 4802. *Stipa* ^{*wireless* fide Munro Coast May} " " "
 4803 Wet meadows Little River/coast
 4804. Meadows Anderson Valley
 4805. Around rocks " " "
 4806 Little River (sometimes a moderate
 sized-tree. Borders of rivers & creeks.
 4807 Redwoods Anderson Valley
 4808 *Carex*, common in wet meadows
 4809 *Juncus*, Meadows Anderson V.
 Very common forms a large portions of
 the main bulk of hay. Wire-grass.
 4810 Moist meadows Anderson Valley
 4811. Swamps & moist places at Ayo

4812. *Juncus meadows*, Anderson Valley
 4813 Very common in grain fields, Anderson
 4814 Common in Redwoods
 4815. On the dry plains near Little River 24/5
 4816 On metamorphic sandstone bluffs
 { Big River (at the mouth) Mendocino City
 { Rio Grande on the old maps)
 4817 Meadows Anderson V. 24/5
 4818 Moist banks Big River
 4819 Salmon berry Big River 16/5
 fruit very large, but of a rather watery taste
 4820 Cañons at Big River = Mendocino City
 4821. Dry hills Anderson Valley
 4822 *Quercus Wislizeni* Anderson Valley
 4823 " " " "
 4824 " " " "
 4825 *Qu. Louisaensis* Anderson Valley
 4826 Meadows Anderson V.
 4827 Swamps (open) near Albion River
 4828. Swamps " " " "
 4829 Woods at Cloverdale
 4830 Rocks at Big River Mendocino City
 4831. Meadows " " "
 4832 Grain fields Anderson Valley
 4833 Creek-beds Anderson "
 4834 Dry Creek Mendocino Co.
 4835. *Qu. densiflora* Cloverdale May

June 1866.

Sieras.

From June 6th to Sept.
1866.

10

- 4836 Sporobolus Sandy fields at the San Joaquin & Merced Rivers.
- 4837 Carex. Peechees Pass. 1300 alt.
- 4838 Quercus Wislizeni Bear Valley
- 4839 A low shrub with very slender
woodlike branches (festigiata)
Peechees Pass 1200 alt.
- 4840 Panicum banks of the Merced 11/6
4841. Banks of Merced.
4842. Agrostis Banks of Merced
- 4843 Plains near Merced (sandy soil)
4844. Oenothera " " " "
- 4845 " " " "
- 4846 Dry plains also Bear Valley
- 4847 banks of the San Joaquin
- 4848 Mount Bullion 3000 alt.
- 4849 " " " "
- 4850 " " " "
4851. In the gravelly beds of the San Benito River Coast Range
4852. Elymus Mt. Bullion
- 4853 " " " 15/6.
- 4854 " " "
4855. " " "
- 4856 " " "
- 4857 Ditches and Watercourses Bear Valley
- 4858 A low shrub with slender branches.

June 1868

11.

4858. Bear Valley.
4859. At Clark's and Yosemite Valley ^{2 1/6}
4860. Sandy soil at Clark's
4861. Open woods at Clark's ^{light, rocky places} & Yos. Valley
4862. Clark's & Yos. Valley.
4863. " " " "
4864. Juniper near De Long's (4000 alt.)
4865. Stipa. Dry River beds Clark's & Yo.
4866. Juniper ^{wooded} Creek beds Clark's.
4867. Among rocks Clark's. Yo Valley
4868. Clark's & Yo. Valley = sandy soil
4869. " " Banks of creeks
4870. Ceanothus (blue) Big trees.
4871. Kelloggia. Among shrubs and trees
in open woods from Clark's and Yo. Valley
4000 - to Mono Pass 10,000 - 7000
Very common in such localities
4872. Swampy places Yos. Valley.
4873. common Yos. Valley.
4874. Clark's & Yo. V.
4875. Cornus. Clark's Merced River.
4876. Clark's & Yo. V.
4877. Clark's Yos. Valley.
4878. Rock's Big-trees & Yos. Valley
4879. Big trees. low shrubs.
4880. Big trees low shrubs.
4881. Big trees & Yos. Valley.
4882. Open Wood Big trees. 9/6.

June, July, 1866

12.

- 4883 Big trees (7000 alt.) 3-4 feet high
blossoms white.
4884. Big trees, open woods
4885. Mt Ragmont (8-9000 alt) small shrub
4886. Big trees, loose soil
- 4887 Big-trees & Yos. Valley
- 4888 Wet meadows Yos. Valley
- 4889 Rocks near Merced River, Clark's
- 4890 Wet places & River banks, Yos. V.
4891. Juniper Yos. Valley
4892. Helianthus, banks of Merced Clark's
and also Yos. Valley, Very common.
- 4893 Asclepias sandy soil, Yos. Valley
4894. " " sandy soil on the San Joaquin
plains, very common $\frac{7}{16}$
- 4895 Carex, wet places Yos. Valley
- 4896 wet places Yos. Valley
- 4897 Rocky places (shady) Yos. Valley
- 4898 Mariposa Trail among rocks $\frac{1}{7}$
Yos. Valley.
- ^W 4890 Mariposa Trail Yos. Valley
- ^W 4891. *Qu. chrysolepis*. Inspiration rocks
Yos. Valley.
- ^W 4892. *Ceanothus* (white flowers) near Inspiration
rocks - a low flat-topped much-spreading
bush, called snow-bush.
- 4893 flowers blue, loose soil open woods
Trail of Yos Valley 8000 down to 5000

July 1886

13.

4894. Small shrub on the banks of Bridal
Veil-creek. common.
4895. *Glyceria*, same l. also meadows.
4896. Meadows and banks of Bridal
Veil creek. 8000.
4897. Glutinous (viscid) open Woods, Yo. Valley
4898. Wet rocks Yo. Valley
4899. Wet rocks " " "
4900. Maripa Trail Yo. Valley
4901. Meadows Inspiration rocks
4902. *Carex* " " " Yo. V.
4903. " " " " "
4904. Open woods " " "
4905. *Carex* " " "
4906. *Luzula* meadow " " " "
4907. A little low trailing shrub. Trail. Yo.
4908. Trail Yo. Valley
4909. *Poa* open woods.
4910. *Debris* filis whitish blossom.
Yo. Valley.
4911. Very small shrub on rocks *Debris*. Yo.
4912. *Debris* in the Valley.
4913. *Acet* *Debris* where water drops on it.
Valley. 5-12 feet high.
4914. Sandy soil Valley.
4915. Trail open woods Yo. Valley.
4916. meadows Inspiration rock.
4917. Sandy soil Valley.

July 1866

14.

- 4918 Sandy shady soil Yos Valley.
4919 Penothera Valley.
4920 Sandy soil " "
4921. " " " " "
4922 " " " " "
4923 Debris around the Valley.
4924. Sandy soil Valley.
4925. Open woods, sandy soil
4926. Debris Valley.
4927 Trail Valley also Big trees.
4930 Sandy soil Valley.
4931. Little shrub. " "
4932. On wet peaty soil, meadows.
4933. Dodecatheon Valley
4934. Trail Valley open woods
loose soil
4935. On rocks in the valley.
4936. Swampy localities Valley (Trail
4937 Near the Falls in ^{moist} ~~wet~~ places
4938 upon rocks Valley
4939 upon rocks 5/7.
4940 Trail 3/6. Yos. Valley.
4941. Mount Bullion Bear Valley.
4942 " " " upon rocks.
4943 " " " also Yos. Valley
4944. Silene. Mt. Bullion also Big trees &
Yos. Valley. common, in large tufts.
4945. { Mt. Bullion & Yos. Valley.
{ Bear Valley

July 1866

15.

4946. *Scutellaria* Mt. Bullion 9/6
 4947 Mt. Bullion very common also in
 Yos. Valley, Comanche hills.
 4948 Yos. Fall. Valley.
 4949 *Juncus* upper Valley (Yos.) 11/7
 4950 Common in moist meadows. Yos. Valley
 4951. At the junction of the north and south
 fork in the Valley.
 4952. Meadows in the Valley
 4953. Dry sandy fields Yos. *Eriog. virgatum*.
 4954 Wet meadows. Yos.
 4955 *Juncus* sandy fields Yos.
 4956. *Cyperus* meadows Yos. common.
 4957. *Carex* in sloughs Valley.
 4958 *Salix* sloughs Valley. 9/7
 4959 Yos. Valley 14/7.
 4960 *Sedum* rocks at Vernal Fall.
 4961. *Carex* Westfall's meadow 8000 f.
 4962. " " " " " "
 4963 " Westfall's meadow (wet places)
 4964. " " " " " "
 4965. *Trifolium* " " " " "
 4966. " " " " "
 4967 " " " " "
 4968 *Carex* " " " " "
 4969 " " " " " Hillsides
 4970 Along the trail Yos. Valley & Big trees
 4971. Westfall's meadow.

July ~~1877~~ 1868

16

4972. Trail Yos. Valley
 4973. Westfall's meadows
 4974. " " " "
 4975. " " " "
 4976. Mt above the Big tree Grove 21/7
 4977. Big tree Grove. *Eriog. incanum*
 4978. Carex Big tree Grove.
 4979. Big tree Grove (springy
 4980. meadows Big-trees.
 4981. Big tree-Grove (Wax plant)
 4982. " " " in meadows.
 4983. at Clark's
 4984. Yos. Valley near Inspiration rock.
 4985. Big tree Grove.
 4986. Merced River at Clark's
 among the rocks
 4987. Clark's sandy ground.
 4988. " " " "
 4989. Big tree Grove.
 4990. Clark's meadow.
 4991. Big tree Grove springy.
 4992. Big tree-Grove upon rocks.
 4993. Big " " & Yos. Valley (very
 common on loose sandy soil.
 4994. Big-trees 22/7.
 4995. Carex big trees meadows
 4996. " " " "
 4997. " "

July 1866

Ant.

- 4998 Meadows quite shady & moist. Big tree Grove
- 4999 Carex. Big Creek also Big tree Grove (banks)
5000. *Gilia* Hillsides (moist) Big Creek. B. Trees
capitata *linearis*
5001. *Linum*. Big tree-Grove lower part.
not uncommon at that alt.
- 5002 A low shrub 3-4 feet high on the banks
of Big Creek below the Big tree Grove
called there Sweet Bay.
5003. Big Creek. Dry sandy soil
- 5004 *Senecio*. Clark's meadow moist $\frac{28}{7} 66$
5005. Clark's meadow (alt. 4000)
- 5006 *Scutellaria* Clark's meadow. (in patches)
sometimes the flowers are white
- 5007 Moist meadows Big tree Grove
also Soda Springs 9.700
- 5008 Big Creek in sandy banks
5009. Clark's & Big tree Grove. Loose soil
- 5010 Big tree Grove $\frac{1}{8} 66$
- 5011 Carex Big trees, meadows.
5012. Yos. Valley, at Clark's & Big tree-Grove
seen also at an alt. of 8000 feet. quite
common in open woods and sandy banks.
- 5013 Clark's and Valley. banks of Merced River
among rocks
5014. Clark's Among ^{rocks on the} ~~banks~~ of Merced River
- 5016 Clark's. Banks of " " "
- 5015 Clark's in dry fields *Eriog. virgatum*

Aug. 1868

18

- 5017^{9/8} Ostranda's meadow. Indians use it for food.
5018. ^{9/8} Carex in Ostranda's meadow.
5019. Ostranda's meadows.
- 5020 Stipa occidentalis Thurb. In dry sandy soil near Ostranda's. Sheep-men say this grass is much liked by sheep and that they fatten more on this than any other quite common. Yosemite Trail 8000
5021. Ostranda's dry places.
5022. " " " " around rocks.
5023. Ostranda's meadows, common also higher up to 10,000 -
5024. Parnassia. borders of small creeks Ostranda's and Mono Lake.
5025. Among mosses and grasses. Ostranda's
5026. Glyceria. Ostranda's banks of creeks
5027. Dry soil Ostranda's also Yos. Valley
5028. Upon rocks Ostranda's
5029. meadows Ostranda's.
- 5030 Clark's among rocks -
- 5031 Salix Clark's banks of Merced River
5032. Alnus " " " "
5033. ^{10/8} Helianthus " " " " "
5034. " " " " " "
5035. Hillsides dry loose soil " " Clark's
5036. Foot of Mt Dana. Tarlance R. Aug 24 9,700 alt.

Aug. 1866

19.

5037. Same locality as 5036.
5038. Stipes, on loose disintegrated granite 20/8
5039. Low shrub 1-2 feet. Yos. Trail at Empire
Camp. also at alt. 9700 Soda Springs
common also in Little Yos. Valley.
5040 Moist meadows. Soda Springs 9700
5041. at 11,000 feet near Mt. Dana.
5042 Same locality as 5041. on loose light
disintegrated granite soil,
5043 Loose wet soil. Dana
5044. Soda spring Tuolumne R.
5045. Moist meadows " " "
5046. Carex " " " " "
5047 Little Yos. Valley also Yos. Valley.
5048 Veronica. Moist meadows Mono
Pass and Mono Trail at 10,000.
5049. Carex Borders of swamps at 10,000
5050 Soda Springs, Tuolumne R.
5051. Solidago. Meadows " " " 9700
5052. Sambucus Linn. at 10,000.
5053. Salix " " " " "
5054. Tuolumne River " " "
5055. Cuscuta. In dry meadows Tuolumne " "
5056. Carex Borders of swamps " " "
5057. Meadows Tuolumne " "
5058 Artemisia meadows " " "
5059 Epilobium Tuolumne " "

5060. *Soraneus* Tuolumne River. 9,700
5061. *Eleocharis* " " " " "
5062. *Juncus* " " " " "
5063. *Senecio* Dry woods " " " " "
5064. *Agrostis* meadows " " " "
5065. " " " " " "
5066. *Festuca* Mt Dana 12,000
5067. *Festuca* " " " 12,500.
5068. *Poa* " " " 12,000
5069. *Carex* " " " 11,000
5070. *Agrostis* ^{various} beds of streams near Mt Dana ^{10,000 ft alt.}
5071. *Calamagrostis* Mt Dana 12,500
forming large tufts among the rocks
5072. *Carex* Mt Dana 12,000.
5073. *Poa* " " " 12,500.
5074. *Carex*. " " " 12,500.
5075. *Luzula* Mt Dana at. 11,000.
5076. *Poa* " " " open Woods at. 11,000
5077. *Carex* " " " 12,000
5078. *Stipa* ^{various} La Trine " 10,000
5079. Woods at Soda Springs 9,700
5080. *Loetes* pools at Mt Dana. 11-12,000.
5081. Mt Dana 12,500
5082. " " " " "
5083. " " " " "
5084. " " " " "
5085. " " " " "

- 5086 Carex on dry Disintegrated Granite Hills
 5087. Mt Dana.
 5088 Carex, Among Sage-bush Mt D. 10,000
 5089. East descent of Mono Pass, 9000.
 5090 Pools, Tuolumne R. 10,000.
 5091. Isoetes Pools " " " "
 5092. Pools " " " "
 5093. Isoetes Near Mono Trail. Tuolumne R. 10,000.
 5094. Chara. Mono Trail, 10,000. pools.
 5095. In P. contorta. Little Yos. Valley
 5096. Juncus East side of Mono Trail. 10,000
 5097 Mono Trail 10,000
 5098 Eriog. sparganium, var. " " " "
 5099 " " " " " "
 6000 Histioglossum (lost 901) Ostranda's 8000
 6001 Luzula Mono Trail, 11,000 common
 6002. Moist open woods Ostranda's
 also Big tree Grove 8-11,000.
 6003 Ostranda's
 6004. " " " dry soil in open woods
 6005. " " " dry soil in meadows
 6006. Juncus Surias meadows,
 6007. Dry rocky hill-sides (9000) near Merced R.
 6008 Open Woods at 9000 Mono Trail
 also Sonora Pass same alt. grows in
 large tufts.
 6009 With the preceding 6008.

- 6010 Eriog. meadows (moist) at 9000 alt.
 6011. same loc. as 6010.
 6012. Mono Trail. 8000.
 6013. Juncus " " 10.000.
 6014. Poa Among rocks Mono Trail. 10.000.
 6015. Swamps near Nevada Fall.
 6016. Mono Trail 10.000.
 6017. Luzula Mt. Dana
 6018. Artemisia " " "
 6019. " " "
 6020. Carex " " "
 6021. Senecio " " "
 6022. Luzula Swamp. places Mt. Dana.
 6023 " " " "
 6024. Dry soil near Mount Dana
 also near Mono Lake and all dry moraine
 on the eastern slope of the Sierras
 6025. Loctes east side of Mono Trail
 pretty deep under water collected by
 Col. King.
 6026. Juncus Yosemite Valley
 6027. Juncus Big tree Grove.
 6028 " " " " "
 6029. Juncus Borders of Mono Lake
 6030 " " " " " "
 6031 " " " " Big tree Grove
 6032 " " " " Big tree Grove

- 6033 *Junco* Los. Valley
 6034. " " " " "
 6035 " " " " " June July
 6036. " " " " " " "
 6037 " " " " " " "
 6038 " Big tree Grove moist meadows.
 6039. *Junco* Mono Paps Sept.
 6040 " " " Mount Dana 12,000
 6041. " " " Alpine meadows, 10,000
 6042. " " " San Francisco.
 6043. " " " " " " "
 6044. " " " with 6042.
 6045. *Pinus flexilis* Mono Paps
 making its appearance at 10,000 on the
 western side and descending on the
 eastern to 8000.
 6046. *Pinus flex* Mono Paps.
 6047 *Pinus ponderosa* var.
 Mount Maymorn 8-9000 near
 Big tree Grove.
 6048. *Pinus contorta* Los. Trail, 8000
 6049. *Pinus ponderosa* Big Creek.
 Clarks moist meadows with
 very large cones.
 6050. *Pinus monticola*. Mount
 Maymorn 8-9000.
 6051. *Pinus Lambertiana* Mt. Maymorn.
 8-9000.

6052. *Pinus monophylla*.
Mono Lake Sept. 1866.
6053. *Tsuga Mertensiana* 200-225
feet ~~high~~, 2-3 feet Diam. 1-2
miles from the coast.
6054. *Qu. chrysolepis*. Sonoma Co. June.
6055. *Qu. agrifolia* Monte del Diablo 9/66.
6056. *Qu. Gambelii*. Dry meadows.
6057. *Qu. Sonomensis* Marin Co.
6058. *Qu. agrifolia* Marin Co. 9/4
Tamal Pais.
6059. *Qu. Wislizeni* Engl. Ukiah 9/4.
6060. *Qu. Ukiah*
6061. *Qu. " "* 18/4 66. 9 feet circumf.
bark white narrowly rimose.
6062. *Qu. Wislizeni* Engl. Anderson Valley
6063. " " " " " " " 19/5
6064. " " " " " " " "
6065. g. " " " " " " " "
6066. h. " " " " " " " "
6066. a.b.c. *Qu. lobata*. Anderson Valley
6067. *Qu. Sonomensis* " " " " " "
6068. *Qu. Wislizeni*. Bear Valley 9/66.
6069. *Luzula* Jos. Valley borders of creeks
6070. *Hierochloa macrophylla* Thurb.
Redwoods of the coast.
6071. *Aira caespitosa* San Francisco
meadows. Col. Munro says: this is a variety
of that species and nothing else

- 6072. *Aira danthonioides* Oakland
common on all poor clayey soil on
the coast.
- 6073. *Festuca pauciflora* Thunb.
Oakland, moist glades.
- 6074. *Eriopyrum Douglasii* ^{+ look} Sandy
sea shores of S. Francisco ^{Apr: 1865.}
- 6075. *Lophochlaena californica* Sonoma Co.
^{May S.F.} also Marin & Mendocino Co. ^{Need} Oakland
grows in all the moist meadows along
the coast.
- 6076. *Melica imperfecta*, moist
glades and hillsides San Fran.
and Oakland. Ap.
- 6077. *Trisetum cernuum*. Contracted
form near the sea shore in unpro-
tected places.
- 6078. *Agrostis asperifolia*? exposed to
rough sea breezes
- 6079. *Agrostis* ^{asperifolia} San Leandro Creek B.
delicate form - sheltered.
- 6080. *Elymus* Half-way-house
San Francisco. Moist meadows.
- 6081. *Agrostis verticillata* San F.
wet places.
- 6082. *Polygomon Monspeliensis*
Wet places S. Francisco.

6083. *Poastridium*, dry hills San Fran.
latest grass in dry places. Sept.—
6084. *Calamagrostis Aleut.*
San F. In hills among rocks also
in swamps near the coast.
6085. *Elymus condensatus*, Borders
of swamps; also at Monterey and
Carmel on the banks of Carmel
River.
- 6086 *Aira elongata*. moist places
along the coast.
6087. *Calamagrostis*, Yos. Valley
very common to 11,000 feet and
also on the eastern slopes of
the Sierras. (*C. Canadensis*)
- 6088 *Calamagrostis*, Yos. Valley
in swampy places.
6089. *Melica stricta* Bol.
Yos. Valley on Debris piles &c
6090. *Cinna pendula* Trin.
Swampy meadows Big tree Grove
6500 feet. Common.
6091. *Sporobolus ramulosus* HBK
Yos. Valley very small also common
on the shores of Mono Lake.
6092. *Sporobolus*
Last figure of grasses in Hooker's flora borealis
Clark's on banks in sandy soil of Big
Creek. also Yos. Valley.

6093. *Muhlenbergia gracilis* on dry rocks Yos. Valley June-July.
6094. *Vaseya comata* Thurb.
 Banks of water Sept
 Borders of Mono Lake, also Yos. Valley and Upper Tuolumne River always around rocks there.
6094. 2 Yos. Valley.
6095. *Sporobolus asperifolius*
 Mono Lake common. Mono Trail 9000 borders of trees and borders of hot springs - called Boiling Springs Sonora Pk. east side of Sierras.
6096. *Sporobolus ramulosus*
 Mono Lake, gravelly soil
6097. *Stipa (chrysophylla) ??? (not)*
Stipa Kingii (if new (?) ^{Sept} 9700 alt
 meadows on Mt. Dana and at the foot of that Mt. ^{Upper Tuolumne}
6098. *Calamagrostis Breweri* Torr.
 Meadows of the Upper Tuolumne River common, Sept. 66.
6099. *Stipa* Valley, Yosemite, (dry soil)
viridula Trin.
6100. *Festuca* Mt. Dana.
6101. *Vaseya comata* Yos. Valley around rocks.
6102. *Agrostis Hilli brandii* Thurb. moist meadows. Big Tree Grove also, at alt. 9700 feet.

- 6103 *Agrostis* Yos. Valley. borders of streams
6104. *Danthonia* Meadows at Ostranda's
occurs also at 10,000 feet alt.
6105. *Agrostis* Clark's & Yos. Valley
6106. *Agrostis* Yos. Valley
6107. *Agrostis* Ostranda's & Upper Tuolumne
- 6108 *Glyceria* Yos. Valley
- 6109 *Stipa* ^{*viridula* Trin} Big trees & Yos. Valley
- 6110 *Triticum* Yos. Valley ^{sandy soil June}
6111. *Glyceria* Yos Valley
- 6112 Big trees & Yos Valley
- 6113 *Atropis* Borders of Mono Lake.
6114. *Poa* Mono Lake
- 6115 *Poa* Ostranda's Yos Valley
- 6116 *Stipa* Mono Lake ^{Paed 8000 on moraines}
- 6117 ^{*richardsonii?*} Mono Lake
- 6118 *Festuca microstachya* Ukiah Meadows.
6119. *Melica foaeoides* var *bromoides*
6120. Ukiah. Throughout the Coast Range.
- Melica foaeoides* Callian
6121. *Melica* Yos. Valley
6122. *Trisetum cernuum* (true form
thickets along the coast in Mendocino
- 6123 *Phalaris Californica* (fide Col. Munro)
Large tufts along the coast.
6124. *Sonora* in dry creek-beds also
Yos. Valley
- 6125 *Eragrostis* Cultivated fields

6126. *Eragrostis* Sonora, Cultivated fields
 6127. *Panicum* " " " " "
 6128. *Trisetum* Coast common
 6129. *Juncus* Mono Paps.

Compositae

6130. Mono Lake
 6131. Foot of Mt Dana around rocks als. Los. Valley
 6132. Mt Dana at 12,000. oily exudation of a
 very agreeable smell. (Among rocks).
 6133. Mono Lake Dry sand.
 6134. Borders of streams near Mt Dana
 also near the falls in Los. Valley
 6135. Mono Paps (10,000) a very low shrub.
 6136. " " upon rocks (glutinous) 10,000.
 6137. " " a low shrub. 9000-10000
 6138. " "
 6139. " "
 6140. *Senecio* Mono Paps on rocks.
 6141. Shrub 3-4 feet high on Monte de Diablo
 collected in April 1866.
 6142. Shrub 3-6 feet high Mono Lake.
 6143. Borders of Mono Lake on alkaline soil
 6144. Shrub 3-5 feet high sandy fields Mono Paps
 and Mono Lake.
 6145. Mono Paps. (all in Sept. at that locality)
 6147. Mono Lake (sandy soil)
 6146. Mono Paps.
 6148. Mono Paps

- 6149 Mono Pass, small shrubs
 6150 " " " "
 6151. " Lake " "
 6152. " Pass " "
 6153 Meadows at Soda Springs
 6154. Mono Pass around rocks
 6155. Mono Pass
 6156. Oakland April
 6157. Sonora Pass 9/9.
 6158 Sonora Pass road also Yos. Valley & Big trees
 6159. Near Bridgeport near Mono Lake
 6160 Aster. Borders of Boiling Springs Sonora Pass
 6161. Marin Co. San Raphael
 6162. Borders of streams near Mt. Diablo 9/4
 6163 Monte del Diablo
 6164. Yos. Valley. Big trees.
 6165. Clark's common.
 6166 Aster. At Ostrander's 8000.
 6167 Dry hillsides at Clark's July-Aug.
 6168. Bridgeport (on east side Sierras) on alkaline
 soil
 6169. Yos. Valley also at the trees.
 6170. " " a single specimen (seen nowhere)
 6171. Bahia, Yosemite Valley (small shrub.)
 6172. Big trees
 6173 Yos. Valley.
 6174. " "
 6175. Baccharis a very small shrub 4-8 inch. in crevices
 of rocks Yos. Valley

- 6176 Valley and Big trees
 6177 Mono Pass.
 6178 Aster Yos. Valley
 6179. Helianthus Sonoma cultivated fields
 6180. Mono Lake
 6181. Higher Sierras
 6182 San Joaquin Valley
 6183 " " "
 6184. Yos. Valley
 6185. Aster Mount Dana
 6186 Yosemite Valley
 6187. Coast Range at Cahto Long Valley
 6188 San Francisco Dr. Kellogg
 6189. San " " " "
 6190 " " " " "
 6191 " " " " "
 6192 Oakland 9/4 " " "
 6193 Coast Range Apr. & May
 6194 " " " "
 6195. Carex San Francisco 9/4
 6196 " " Yos. Valley 9/6
 6197 " " Petrandia's
 6198 " " Yos. Valley
 6199 " " Yos. Valley
 6200 " " " "
 6201 " " " "
 6202. " " Oakland slough 9/4
 6203 " " " " " "

6204. *Carex* Oakland 9/4.
 6205. " " Westfall's meadows 8000. 9/7
 6206. " " Clark's
 6207. " " Mono Trail 9/9
 6208. " " Clark's
 6209. " " Big trees
 6210. Higher Sierras 9/9
 6211. Ostrander's meadow.
 6212. Yos. Valley
 6213. " "
 6214. Westfall's meadow 8000.
 6215. Yos. Valley
 6216. " "
 6217. " "
 6218. " "
 6219. " "
 6220. Soda Springs Upper Tuolumne 9/9
 6221. Big T. Grove & Yos. Valley
 6222. Yos. Valley

6223. *Cyperus* Valley Yosemite common
 6224. " " Placerville. Mr. Nathan
 6225. *Eleocharis* Yos. Valley
 6226. " " Mono Trail 9000.
 6227. *Cyperus* Yos. Valley
 6228. Yos. Valley
 6229. *Eleocharis* Valley
 6230. " " Yos. Valley
- } 9/6-7

6231. Scarpus Yos. Valley
 6232 " " Yos. Valley
 6233. " " Mono Lake
 6234. " " " " "
 6235 Valley Los.
 6236 Elach. Yos. Valley
 6237 Mendocino City 9/5 66.
 6238 Clark's also Valley (Los.)
 6239 Valley Los. among rocks.
 6240 Big trees on Mount Raymond
 among rocks
 6241 Mono Trail 9-10,000 ^{9/9-} among rocks
 6242. " "
 6243 " "
 6244. " Big tree Mount Raymond
 6245 " " & Yos. Valley
 6246 " "
 6247 Coast Range Mendocino Co.
 6248. Mt. Dana & Mono Trail
 6249. Anderson Valley Coast Range 9/4-5
 6249² Lilium Clark's big tree & Valley
 6250 Yos. Valley in moist places also Clark's.
 Very common along streams at Clark's.
 6251. Big trees also Valley
 6252. Big trees " " "
 6253 " " "
 6254. Tuolumne River at 9700 f. alt.

6255. *Veratrum*

Big trees 4000-9700 also in high alt. on the eastern slope of the Sierras. Always in swampy meadows.

6256 *Mentzelia*

Gravelly banks of Mono Lake. 9/9

6257 *Quercus* (Doogl) *lobata*

Mendocino Co.

6258 *Ranunculus*

Astrandus: Clark's (soft sand & mud)

6259. *Ranunculus* *terrestris* Nutt

Big trees (Wet soil)

6260 *Thalictrum*

Yos. Valley also Mono Pass

6261. *Ranunculus*

Banks of a creek. Mono Lake

6262 *Clematis*

Yos. Valley

6263 *Aquilegia*

Rocky places Mono Pass

6264. *Malva*.

Bridgefoot

6265. Mono

6266. Montecito Diablo - rocks

6267 " *stramonium* high soil

6268 " " "

6269 Clark's, Big trees, Yos. Valley

6270 " " " "

- 6271 Yos. Valley
 6272 Mono Pass
 6273 " " ^{Arabis}
 6274 Big Trees & Yos. Valley
 6275 Mount Diablo Apr.
 6276 " " " " "
 6277 Viola, Valley (Yos.) (fls. white in swampy places)
 6278 " " " " " blue
 6279 " " San Jo. " " ~~shrub~~ meadows
 6280 Phacelia Monte del Diablo
 6281. Pelland hies
 6282 Yosemite Valley, Hill sides - trail
 6283 Yos. " " { dry station
 6284. Yos. " " {
 6285. Trifolium Marin Co. 9/4
 6286. Lupinus, Yos. Valley
 6287 Trifolium " Valley
 6288 " " " Mono Pass (meadows)
 6289 " " " Yos. Valley (among rocks)
 6290 Cercocarpus Mono Trail (Pass)
 6291 Spiraea, Yos. Valley (Falls)
 6292 St. Clark's, sandy soil, bed of Merced
 6293 Big tree Grove (Large shrub)
 6294 Gebris piles Yos. Valley
 6295. Pragnia Yos. Valley
 6296. Yos. Valley on rocks
 6297 Acer " " " " "
 6298 Hypericum banks of Merced Valley.

6299. *Vaccinium* (blue berries) 3-4 feet
high in swampy meadows near the falls
back of Yos. Valley on the Mono Trail
6300. High. *Succisa* along little streams.
10,000
6301. *Orthocarpus* Mission hills (9/4)
6302. " " Oakland 9/4
6303. " " Mission hills 9/4
6304. Dry Creek Mendocino Co.
6305. Moist meadows at Estrada's
9/7-9/8
6306. *Meimulus* Yos. Valley 9/6.
6307. " " " "
6308. " " " "
6309. *Succisa* at 10,000.
6310. Yos. Valley on Water-course
6311. Valley (Yos.) in sandy soil
6312. " " 2-4 feet high
6313. Peckeco Pass June 6th 66.
6314. Dry hillsides at Clark's
6315. *Meimulus* Mono Pass Sept.
6316. " " " " " rare
6317. *Audebertia* (shrub 4-8 feet high)
Monte del Diablo Apr. 66.
6318. Oakland hills Apr —
6319. Yos. Valley
6320. Valley " July
6321. At Clark's

- 6322 Yos. Valley Watercourses
 6323 Pechees Pass Water " " " June
 6324 Yos. Valley, fls. bright blue July
 6325 Ribes Oakland hills Apr.
 6326. " " " " " "
 6327 " " " " " "
 6328 " " Yos. Trail. July
 6329 " " Upper Tuolumne R. Sept.
 6330 Canothus Valley & Big Tree Grove.
 6331. " " Of a very spreading habit
 Big tree Grove.
 6332. Bear Valley June
 6333 Salix Monte del Diablo
 6334 " Mission Dolores / Apr.
 6335 " Yos. Valley June
 6336 " (Camp 28) Sierra Mtn. Aug 23^d
 Mono Trail
 6337 " Westfall's meadow.
 6338 Lonicera Westfall's meadow.
 6339 Lymph. Mono Pass, rocky station, Sept.
 6340 Orthocarpus Mission Apr.
 6341 Umbellif. Astruc's meadows 8000. July
 6342 " " Mono Pass Sept.
 6343 " " " " "
 6344 " " " " "
 6345 Yos. Valley
 6346 Galium Yos. Valley
 6347 " " " "

6348. *Galium* Sierras Mono Trail
 6349 " " " " " "
 6350. " " Big trees July
 6351 *Heuchera* Rocks Yos. Valley July
 6352 *Ledum* Valley also Mono Pass
 6353 " " " " "
 6354 *Polygonum* Yos. Valley June
 6355 " " " Astranda's 8000. July
 6356. *Eriogonum* Mono Pass 2-3 feet
 high shrub sandy soil
 6357 *Eriogonum* ^{Wrightii Fern.} Near Mono Lake (sandy soil)
 6358 *Polygonum* Big trees July
 6359 *Lentianus* Astranda's, 8000-10,000, meadows
 6360 " " Soda Springs 9,700 meadows
 6361. *Thrasus* " " " "
 6362. *Circaea* Yosemite Valley (moist rocks)
 6363. Mount Diablo 9/4 66
 6364 *Oenothera* Mount Bullion June 66.
 6365. *Epilobium* Big trees July
 6366 *Oenothera* Clark's July (sandy soil)
 6367 " " " " "
 6368 *Epilobium* Big T. (Yos. Valley, July
 6369 " " " " " "
 6370 Bear Valley June
 6371. *Epilobium* Big T. July
 6372 " " " " "
 6373 Mono Pass / loose soil Sept.
 6374. *Claytonia* Yos. Valley (moist places)
 June

- 6375 Claytonia San T. Apr.
 6376 " " Los. Valley June
 6377 Asclepias Oakland Harwood.
 6378 " " Los Valley July
 6379 Apocynum " " "
 6380 Acauthobium " " " on S. pendula.
 6381. Casenta Big Trees " "
 6382 Utricularia. Pools near Soda Springs 9/700
 6383 Goetes Mono Pass deep water
 6384 Los. Valley
 6385 Hippuris Pools Soda Springs
 6386 Los. Valley
 6387 Merced River. Los Valley
 6388. ^{Shepherdia canescens} 5-15 feet high large shrub on alkaline soil. Abundant along Mono Lake
 6389 Mono Pass 3-6 feet high
 6390 Alpine meadows 8000. Los. Trail
 6391. Pools at Soda Springs Sept.
 6392. Shrub 4-8 feet high borders of Mono Lake, alkaline soil, Sept.
 6393 Potamogeton, Clark's also Los. Valley (July)
 6394. Oakland 9/4 - 5
 6395 San T. 9/5 Sandy soil
 6396 Oakland "
 6397 Mount Diablo 9/4 C.C.
 6398 " " " "
 6399 " " " "
 6400 " " " "

- 6401 Mono Pass (7000) 9/9 creeping in
dusty road.
- 6402 Mount Diablo 9/4 66.
- 6403=4817. Coast & Valley (Tor.)
- 6404 Yos. Valley
- 6405 Mono Pass (Borders of Springs) 9/9
- 6406 Mono Pass
- 6407 Mono Lake Sandy Soil
- 6408 Mt. Dana Boss. highest plant collected
- 6409 Yos. Valley 9/6.
- 6410 Mono Lake sandy Soil 9/9
- 6411 " " " " "
- 6412 Iris Big Trees
- 6413 " Mono Pass Sept.
- 6414 Euphorbia Mt. Diablo Apr 66
- 6415 Near Soda Springs Sept.
- 6416
- 6417-6462 Mr. Kattan's collection
It was my intention to remember his
plants, but was obliged to give it up,
being pressed too much by work.

1 Aug. - middle Sept.
from El Paso to Mono Lake

Spring & Summer 66. following places
Febr - March I collected around San Ti
First week of Apr. Mount Diablo
11 Apr. - 24 of May Mendocino Co.
6th of June Mono Pecos Pass
14 of June to 17th of July Yosemite Valley
17th July - 1st of Aug Big trees

Grasses collected in the vicinity of San Jo.

No. 155 16-15 Miles south of this city in an open swamp subject to overflowing by tide water. It grows in tufts occupying the more elevated places. June. Seemingly not eaten by cows.

1534 " 2, *Glyceria paniculata* About 2 Ms. south of S. Jo. in a well-wooded swamp in which it occupies the glades (Willows, *Lonicera*, *Leucosagrof*) End of May. Bright green, large leaves,

1535 " 3, *Scleria elegans* On dry hills, common, forming large root stocks. Variable in size. May. June. Angel Island. Goat Is. Oakland.

1536 " 4, *Miscanthus acuminatus* Common in open ground and glades. Also close to the bay, where I found the largest spec. April June.

1537 " 5, *Miscanthus bairdianus* Very early and common on dry hills where it covers large spots. Drops early its seeds. March-June.

1538 " 6, *Poa annua*, *trivialis*, *pratensis* (not numbered) The first grows on the roads and cultivated watered fields. The second was found in a canon near Mission Dolores. The 3^d occurs sparingly in the meadows at Oakland.

1540 " 7, *Bromus ciliatus* Common in moist places and dry sand which seems however watered by subterranean springs. Exceedingly variable. The glaucous spec. were found among the other, but blooming much later. I have not been able to distinguish them. June

1545 " 8, *Lophochlaena Calif.* Was found in wet place in a meadow 3 Ms. back of Oakland. It is much liked by cattle. Seems to week to support itself. The most interesting grass found here.

1544 " 9, *Bromus ciliatus* Was found in a fence-corner near Mission Dolores. June

1543 " 10, *Bromus racemosa* In roads and meadows where it occurs in about the same manner as *Bromus secalinus* in wheat at the East. June?

1542 " 11, *Scleria* Among shrubs. common. June July

1540 " 12, 13, Dry places (the root bulb-like) Avoided by cattle) June

1539 " 14, *Muhlenbergia* In large tufts. Very common especially along the bay. Spreads its panicle while in bloom

1535 " 15, *Panicum Californicum*, this name I changed to *Panicum thermophilum*

however into *T. thermale* as it is found growing always in the Geysers. Prof. Brewer has quite a number of spec. in his collection

No. 16. Is very common on the dry hills, in fact it occupies the place of *Pectua Myurus* when dried up

No. 17. I found on a dry hill near Fort Point. It is as yet but little cultivated. *Phleum alpinum*

No. 18. Occupies in many places the fence corners especially near the bay and Mission Dolores.

No. 19. Grows in abundance near the salt-marches at Oakland *Hordium prostratum*

No. 20. I described under the name *Danthonia Californica*? It is very common on dry hills where it is generally very much reduced in size. (*Danthonia decussiflora*) I think it is

No. 21. Is common on all hills indeed it forms in many places the principal grass.

No. 22. With this the same holds good only it is inclined to form tufts. May, June *Hesperis matronalis*

No. 23. Occurs sparingly in the meadows at Oakland where it is found in the more wet places. May, June

No. 24. Grows in large tufts on Angel Island in wet places some are very high 5-6 feet. (tufts often 3-4 feet in diameter) June

No. 25. Is diocious, grows in pure sand near the beach (April) its roots are very long and creeping. In Among (May) shrubs where it is protected against the wind I found specimens 3-4 feet high. Generally, bunch - 1 foot.

No. 26. Abundant in the salt marshes June, July

No. 27. In grain fields and meadows very abundant in some places it is almost the only grass growing. June

No. 28. I found in a swamp among willows in great abundance July.

No. 29. Is found in great abundance in dry and wet places 1525 *Aira elongata*

April - June in dry places it is small its panicle spreading, globular in wet pl. its panicle is very long and narrow.

No. 30. In a wet meadow Oakland on the border of a little streamlet July *Aira heleniformis*

No. 31. Common in wet places and in roads

No. 31a. Grows among 31. *Polygonum monspeliensis* var. *lucida*

No. 32. Found in a valley (Angel Island) early in June

No. 33. Among shrubs at the same place - East side.

No. 34. On exposed precipices along the bay where it forms large mats

No. 35. In wet places much later its anthers are much smaller than those of 34. and seemingly not exerted

No. 36. Another form growing in open meadows.

No. 37. In a fence corner at the Willows near Mission

No. 38. Among shrubs late in June Oakland.

No. 39. In a swamp near the Willows popular place

No. 40. In the garden of Cal Walker where it is the principal weed.

No. 41. In swamps at the Willows. *Polygonum monspeliensis*

No. 42. In a meadow at San Mateo (20th April) South; *Trifolium repens*

No. 43. On the border of a rivulet at Oakland 4-5 feet h. June July. June July

No. 44. In a garden, July *Trifolium repens*

No. 45. Covers the dry hills early in spring in great abundance. Apr. May *Festuca monspeliensis*

No. 46. Sparingly, inclined forming tufts *Festuca*

No. 47. Forms tufts at the borders of streamlets or at the foot of hills. June July *F. paniculata*

No. 48. Like 45. *Festuca Myurus*

No. 49. Forms tufts of a foot in diameter on the borders of streamlets and wet hills. Its leaves have the feel of velvet when green at the lower side and as thickish *Festuca acutella*

Elymus Ciliarius

N^o 50¹⁵⁰⁴ Common at the bay and hills June
" ¹⁵⁰³ 51. At the border of the salt-marshes
Elymus
condensatus Oakland where it grows very dense
like in a wheat-field. 5-6 feet high.
July 10-20. in blossom.

All these grasses with the exception of N^o 25
grow in a heavy clayey soil which is predominant.
They seem to belong to Calif. exclusively; those
found only(?) at this coast or side of the Pacific
show a tendency to grow in tufts (cause of the
dry climate?)

N^o 1. 3. 6. 11. 12. 14. 15. 17. 20. 22. 24
25. 26. 30. 33. 34. 42. 43. 44. 46. 47. 49.
50. 51. = 24 are perennial?)

In direct shade I found none.

The wild oaks I did not enumerate, you have
undoubtedly enough of it.

~~I have to say 129. up to 250.~~
~~These are very beautiful. They are not~~

Just a day ago I received Steudel's work. I have not
been able to find N^o 29. 47. 49. under those
names given in Hook. Bor. Am. I considered them
very good, characterized spec. Also N^o 7 is
now where mentioned.

1559. Miss Agrostis

1558 *Elymus* this form I collected late in fall
near the bay. I found it also on hills, seems to be very poly-
morphous.

Grasses

+5064 } *Agrostis*

+6107 } *Agrostis*

6106. } *Agrostis*

6105 } *Agrostis*

6105. } *Agrostis*

6103 } *Agrostis*

+6079 } *Agrostis asperifolia*
Banks of Alameda Creek. San J. May.

+6102. } *Agrostis Hillebrandii* Thurb.
Mariposa Big-tree Grove July

+5070 } *Agrostis varians* Trin.
River-bed of the upper-Tuolumne 10,000 alt.
Sept.

4861. }
Yosemite Valley June
Light-shady places

this is in the hands of Prof. Thurber.

6093. *Muhlenbergia gracilis* Trin.
Rocks. Yosemite Valley. June

+6094. *Vaseya comata* Thurb.
Sept. Mono Lake on the banks of creeks

4801. *Agrostis virescens* Tide Mono
Anderson Valley Coast May

6116. *Stipa Richardsonii*?
Mono Pass 8000 Alt. (on moraines)
(Go up the pass and see if my determination is correct)

6109. *Stipa viridula* Trin.
Yosemite Valley (sandy soil) June

+6097. *Stipa Kingii* spec. nov.
Upper Tuolumne Meadows Sept. (9400 alt.)

{ 6099. *Stipa viridula* Trin.
5078. Big tree Grove (6500 alt.)

14865+ *Stipa occidentalis* Thurber
5020. Dry sandy soil. Yosemite Trail (8000 alt.)

{ 6075. *Lophochlaena Californica* Nees
Moist meadows May. San Fr.

+6074. *Brizopyrum Douglasii* Hook.
Dry sand. Apr. San Fr.

+6073. *Festuca pauciflora* Thurb.
fide Thurb.
— *occidentalis* fide Munro
Moist groves Oakland May

+6073. *Aira danthonioides* Trin.
Moist meadows Oakland Apr.

+6074. *Aira cespitosa* var. *densiflora*
Moist meadows San Francisco. May

+5019. *Trisetum subspicatum* var.
Upper Tuolumne River. Moist meadows
Sept. // Although this differs ⁷⁵⁰⁰ considerably from the
true form yet I cannot regard it anything else
but a variety. //

+6104. *Danthonia sericea* Nutt.
Meadows Yosemite Trail 8000 alt.

6118. *Festuca microstachys* Nutt.
Ukiah Mai

6119. *Melica poaeoides* Nutt. var.
bromoides Bol.
Open woods Coast Range May

6120. *Melica poaeoides* Nutt.
Dry hillsides S. T. Apr.

6121. *Melica poaeoides* Nutt. var.
inflata Bol.
Yosemite Valley June.

4698 *Melica poaeoides* Nutt. var.
pubescens Bol.
Near the Coast. Mendocino Co. May.

- + 6124. *Vilfa*
Sonora. Dry creeks. Sept.
In the hands of Thurber.
- + 4704. *Pectuea microstachys* Nutt. var.
polyphylla Bol.
Woodland. Anderson Valley May.
- + 4840. *Panicum dichotomum*
Yosemite Valley June
- + 6090 *Cinna peridula* Trin.
Moist meadows. Big tree - Grove July
- + 6080. *Hierochloa grandifolia* Thurber.
Redwoods Coast Range Apr.
Col. Munro thinks this is a mere variety
of the *H. borealis*.
- + 6085. *Elymus condensatus* Presl.
Banks., Alameda San T. June
- + 6083. *Pastidium australe* Presl.
Dry hills. San T. Sept.
6082. *Polypogon Monspeliensis*
Moist soil. S. T. May.
- + 6081. *Agrostis verticillata* Vill
Creeks San T. May
- + 6080. *Hordeum* -
- + 6076. *Melica imperfecta* Trin.
Woodlands near San T. Apr.

- +6001. *Vaseya cornata* Thurb.
Yosemite Valley June
- ✓ 6084. *Calamagrostis Aleutica* Trin.
Oakland Hills June
- ✓ +6089 *Melico stricta* Bol.
Yosemite Valley June
- +6098. *Calamagrostis Breweri* Thurb.
Upper Tuolumne 9700. Meadows.
- +5071. *Calamagrostis*
Mount Dana 12500 alt.
- +6088 *Calamagrostis Canadensis* ?
6087 Yosemite Valley
- +4766. *Calamagrostis*
Sloamy soil Mendocino, May, June
- +6096. *Sporobolus ramulosus* HBK.
Mono Lake. Sept.
- +6095 *Sporobolus asperifolius* Nees & Mey.
Mono Lake Sept.
- +6092. *Vilfa depauperata* Torr.
Yosemite Valley. June
- +4836. *Sporobolus airoides* Torr.
San Joaquin Valley June.

+6091. *Sporobolus*.
Yosemite Valley June
In the hands of Thurber.

6100 *Festuca rubra* (fide Thurber)
+5066. Mount Dana 11,000 alt.

6114. *Glyceria airoides* Thurb.
5044 Mono Lake

+6115 *Poa*
Yosemite Valley July

6114. *Poa arctica* R. B. fide Thurb.
Higher Sierras. Sept.

+4705 *Poa brevifolia* Muhlenberg
brachyphylla Schult
Stend Synop. p. 261.
Woodland. Mendocino Co.

✓6122. *Trisetum cernuum* Trin.
Woodland. Mendocino. May
this is the true form as described by
Trinius.

Those checked (x) are on printed list.

Plants collected this spring (Apr. 65) in the foot-hills of
the Sierra Nevada from Sacramento to Forest Hill.

4500

Wet places especially among grain; it forms large patches often 10-15 feet
in diameter. Very fragrant and much infested by bees. The succulent
stems are all procumbent. The roots fibrous white and slender. 9/4 65
Flowers slightly touched with pink. Sacramento V. 4-5 mi from Sa.

4501. Grows among and with the preceding species; scarce.

4502. *Trifolium*, wet places in meadows near Sacramento

4503. *Carex* looks like *C. Douglasii* (Pursh?)

In light sandy soil at Freeport 15 mi below Sacramento, gregarious

x 4504. Meadows near Freeport Sacramento V. 9/4 65.

4505. Among 4504.

4506. *Eschscholtzia* Meadows Sacramento V. near Freeport

Auburn 10/4 65

4507. Hillsides (on red clay)

4508. with the preceding.

x 4509. *Lonicera tuberosa*. Hillsides with the former plentiful
but scattered.

4510. *Ranunculus*. Like the sp. 4509. and with it.

4511. Rocks on hillsides.

4512. Shrub 8-10 feet high, rather slender not spreading
Hillsides of the North branch of the North American River

4513. *Delphinium* Hillsides of the N. Am. River

4514. Upon rocks in the bed of the N. Am. River.

4515. Also among large rocks with the former

4516. *Minimus* Under moist rocks on the banks of
N. Am. River.

4517. Hillsides of the North Am. River.

4518. Hillsides near Auburn

4519. Hillsides plentiful but scattered Auburn.

4520. Hillsides Auburn
 4521. Rocky gravelly hillsides Auburn
 4522. Esch. Hillsides of North Am. River.
 4523. *Luzula* Hillsides " "
 4524. Hillsides of North Am. Very plentiful
 the outside petals yellowish up to the point where they
 join the 3 inner petals which are white.
Auburn 11/4 65
 4525. Around moist rocks, the roots mostly under them
 4526. Shady hillsides, rootstocks large, whole plant
 glutinous and of a strong resinous smell.
 4527. *Erythronium*. Shady hillsides, loose soil
 4528. In a spring (on rocks).
 4529. *Iris*. Shady hillsides
 4530. *Cyclotella alba*. Among rocks, North Am. River
 4531. (flowers white) Among rocks " " "
 4532. *Rubus* Thickets in a ravine " " "
 4533. Hillsides of the same ravine " " "
 4534. *Carex senta*? Among rocks " " "
 4535. Among rocks Riverbanks of " " "
 4536. " " " " " " "
 4537. River banks of the " " "
 4538. Rocks in the bed of the " " "
 4539. *Trifolium* Wet places (slight depression)
 4540. Hillsides in large patches.
 4541. Among shrubs
 4542. with the former
 4543. moist little flats.
 4544. *Viola chrysantha*, flats (moist gravelly)
 4545. same as the former.
 4546. *Trifolium* Flats
 4547. moist flats
 (all within 3 mi. of Auburn)

4548. On flats
 4549. Meadows
 4550. " "
Collected on the stage road from Auburn to
Forest Hill. 12/4 65.
 4551. Borders at a pond. Priggly bear house
 Forms large dense patches.
 4552. Dry hill sides. Same station
 4553. Among shrubs in loose light soil (s. locality)
Forest Hill 12/4 65.
 4554. *Taxus*, a beautiful tree 20-30 feet h. 8-15 in diam.
 with long slender drooping branches. Common then. Devil's
 Gulch, between Forest Hill and Yankee Fins.
 4555. *Cornus sepides* 10-15 feet high, rather straggling
 on moist shady hillsides
 4556. a low 3-4 feet high shrub. rare.
 4557. *Ceanothus prostratus*, forms dense flat patches
 around trees and shrubs, has only the flowers ascending
 4558. *Ceanothus*. North hillside of the Dardanelle Cañon
 4-6 feet high. branches erect, slender and numerous
 4559. *Asclepias* same locality as the preceding
 4560. A low straggling shrub, hillsides
 4561. Shady places New Castle.
 4562. with the preceding
 4563. Dry hill sides New Castle.
 4564. Dry gravelly soil New Castle
 4565. Moist places New Castle.
 4566. Moist meadows New Castle.
 4567. Dry hillsides " "
 4568. " " " " "
 4569. moist hillsides " "
 4570. Dry hillsides " " } by mistake

4569. Dry hills New Castle, ^{cladus.} *Rhipsalis leptocladus* (L.)
4570. " " " "
4571. " " " "
4572. " " " "
4573. " " " "
4574. " " " "
4575. *Monardella* light loose soil around shrubs in rather moist localities. 16/4 65.
4576. *Scutellaria* like the preceding
4577. Hillsides, common
4578. Dry hillsides New Castle
4579. Hillsides near the Middle Fork of the North Am. River.
4580. Among rocks dry hills New Castle.
4581. Hillsides " "
4582. *Viola*. moist meadows " "
4583. Hillsides in shady places, Grizzly head st.
4584. Hillsides New Castle.
- 4585 - 4617 mosses to Sull. et Lesq (2 sp. new to Calif.)
- 4618 - 4620 hepaticae to Austin. (one sp. new to science)
- 4621 - 4626. lichens to Prof. Tuckerm. (one sp. new)
4627. *Viola*, Hillsides Forest Hill
4628. *Calliflora lutea* Roadsides near New Castle the same sp. flowers at the Coast Range about the middle of June.
4629. moist Hillsides Forest Hill 15/4
4630. Cañon of the Gordanelles upon a moist rock on the border of the stream, rare.
4631. *Monardella*. Forest Hill
4632. *Salix* Creek New Castle.

The paucity of many species is owing to the ^{early} season, but a week before snow had fallen at Forest Hill. The composites are more or less all too young, but as I was there, I took what I could find.

1.
Plants collected June 1867

From Cloverdale to Ukiah, Long Valley Mouth
of Mattole River thence down the coast
to Noyo, Mendocino City & Anderson
Valley. (Northern part of Sonoma Co. Mendocino Co. and
Southern part of Humboldt Co.)

6463 Festuca moist Wood in Mendocino & Humboldt

6464 Melica pauciflora var.

Redwood-grove at East Fork Eel River

6465 Agrostis. Moist meadows, Cloverdale

6466 Agrostis Sea shore Fort Bragg

6467 Poa " " " "

6468 Triticum Very dry hillsides

South side, Elk Ridge. 1876.

6469 Stipa (moist places Red Mountain Humb. Co)

6470 Calamagrostis. Grows on bluffs along
the sea shore in the Mattole District
(pieces of rocks) it seems to be the same
species I collected at an alt. of 12000
on Mount Dana.

6471 Calamagrostis

Sphagnum swamps between Noyo and
Albin Rivers. Of this I sent formerly some
old panicles and a few stragglers
collected in Sept. 65. In the same
swamps occurs also Cal. Aleutica, this
species may be distinguished far off
from the other. Besides these two of
these swamps I sent a 3^d one, only a few
inch high 6-8; panicles spike-like
1-2 inch.

- 6472 *Agrostis* with the former 6471
 6473 *Malva* Bear Harbor Mendocino Co
^{20/6/67} 3-6 feet high, tufted like the cult. *Hibiscus*
 6474 *Cypripedium* Swamps on Red Mt =
 Very common there; flowers
 with a yellow tinge.
 6475 *Carex* Swamps Red Mt =
 6476 " " " " " "
 6477 " " " " " "
 6478 " " " " " " } all together
Compositae

- 6479 *Burrielia*. Sea coast at Fort Bragg
 6480 *Hieracium* Open wood Mendocino Co
 6481 *Aster* Elk Ridge Humboldt Co
 6482. *Artemisia* Sea coast near Shelter Cove
 6483 " " On quicksand at Fort Bragg
 6484 Roadsides near Mendocino City (common there)
 6485 Open Wood Humboldt Co
 6486. *Hieracium* Red Mt = Humb. Co
 6487 *Burrielia* Shelter Cove
 6488 *Gnaphalium* Sea coast at Fort Bragg
 6489 Sea Coast at Fort Bragg
 6490 *Chrysopsis* Sea coast Noyo
 6491 *Helianthus* Bot. From Shelter Cove
 down to the Albin River near the coast
 in moist open meadows and *Sphagnum* swamps
 very common, quite a feature

- 6492 Dry hills Cloverdale $\frac{8}{16}$ very brittle stem.
- 6493 Grindelia Quilt sand sea shore near Big
Platt Humb. Co. common
- 6494 Macrorhynchus Red Mt Humb Co
- 6495 Dry loose soil near Red Mt also formerly
collected near Santa Cruz and seen at
this last place also this last May.
6496. Cirsium. Swamp Red Mt 5-6 feet
h. much branched, branches terminated
by small heads, as the old remaining stalks
showed clearly. The young ones were not suf-
ficiently advanced. But I found it on the
coast in similar stations near Fort Bragg
but here it was not so tomentose, woolly
as on the Mt, (yet apparently the same)
- 6497 Cirsium. Swamps Fort Bragg
- 6498 Crepis Dry hillsides near Elk
Ridge (loose soil.)
- 6499 Bahia. Sea coast. Bragg
- 6500 " " Shelter Cove
- 6501 Arnica Dry soil among Chaparral
Humboldt Co.
- 6502 Calais Cloverdale moist meadows
also at Shelter Cove, formerly collected
at El River Cal.
- 6503 Macrorhynchus Open pine woods
Mittelle district

- 6504 Calais Swamps at Fort Bragg
very common there.
- 6505 Coytoggue Shelter Cove Sea Shore
also at Fort Bragg, forms large
patches tufts, stems on the ground
only the heads rising above the grass.
6506. Thickets near the Coast at Shelter Cove
Humb. Co.
- 6507 Lupinus moist places near the coast
at Fort Bragg. Ten-mile river
- 6508 Open woods Coast Humboldt Co.
- 6509 Trifolium. Hard grassy-soil Mendocino
- 6510 Open Woods near Little Bear Harbor
- 6511 Open " " Coast Range
- 6512 Lupinus, white, Banks of Kanelake
Creek. Mendocino Co.
6513. Horsetail swamps Bragg
6514. Rosa Mattole Dist. and East
Fork of Eel R. 3-4 feet high.
6515. Spiraea Redwood Coast R. near
Bear Harbor.
6516. Prunus. Parker's Station Eureka Trail
- 6517 Silene Red Mt. Humb. Co.
- 6518 Stellaria Thickets T. Bragg.
6519. Silene (bright red) along the Coast
6520. Stellaria East Fork of Eel River
- 6521 Dry meadows Elk Ridge
- 6522 Open woods Mattole Dist.

6523. Deep Cañon Elk Ridge Mendocino Co.
 6524 Meadows Elk Ridge
 6525 Lambert's Lake Mendocino Co.
 6526 Dry hillsides Elk Ridge
 6527 Red Mt.
 6528 Upper Crossing of Mattole River.
 6529 Saxif. Rocks deep Cañons, Humb. Co.
 6530 Deep Gulch at Noyo
 6531 East Fork at El River at Wood's ^{Ranch}
 6532 Deep shady Gulch at Noyo.
 6533. Water courses at Cottonaby Creek
 Mendocino Co.
 6534 Another Shelter Cove Humb. Co.
 6535 Dry hills at Cloverdale Son. Co.
 6536. Shelter Cove & Noyo in cultivated
 fields.
 6537 Orthocarpus Sea coast at Noyo
 6538 " " " " " "
 6539 " " " " "
 6540 Penstemon Sandy places in Russian
 River beds at Cloverdale
 6541 same locality as 6540
 6542 Pyrola Redwoods and swamps
 at Noyo
 6543 At Parker's Station Eureka Trail
 6544 Pyrola Open Woods same as 6543
 6545 Swamps at Red Mt.
 A low shrub 1-2 feet h.

6546. *Ledum* Swamps at Noyo a
 very fine shrub (a profusion of flowers)
6547. *Pyrola* Open Woods Elk Ridge
- 6548 Swamps at Red Mt²
- 6549 *Veratrum* at Shelter Cove
- 6550 Swamps at Red Mt²
- 6551 *Streptopus* Deep Gulch at
 Noyo. rare
- 6552 Red Mt²
- 6553 " " { Humboldt Co
- 6554 " " {
- 6555 " " {
- 6556 Rocky places Eureka Trail.
- 6557 *Lilium* Noyo Swamps.
- 6558 *Lilium* Coast Range, Red Mt²
 Middle Dist. evidently our white
 Lily of the Linn.
- 6559 Swamps Red Mt².
6560. *Dichelostemma*. Divide of Russian
 an Eel River thence northward; open
 woods in deep clay soil.
6561. Rocks near Elk Ridge
- 6562 Sea Coast Noyo
- 6563 Shady banks Elk Ridge
- 6564 Drift sand Sea Coast Noyo.
- 6565 *Ledum* Elk ridge on Rocks
6566. *Ledum* On loose dry soil near Elk Ridge
- 6567 *Eriogonum* (Volcanic rocks near Long
 Valley)

- 6568 *Rumex* ^{*palicouli*} Sea coast at Shelter Cove
- 6569 *Eriogonum* Shelter Cove ^(on rocks)
^{pendulous}
- 6570 *Ribes* 4-10 feet high leaves
as large as those of *Acer macrophyllum*
Common on the banks of Cottonaby Creek
20 miles north of Noyo.
- 6571 *Ribes* Low shrub near Red Mt
- 6572 *Nuphar* Lambert's Lake near Eel
River Mendocino Co.
- 6573 Redwoods between Little Bear Har-
bor & Noyo. Generally near *Quercus*
densiflora.
- 6574 *Sambucus* Coast north of Noyo.
berries red.
- 6575 *Phacelia* ^{purpurea} Cottonaby Creek
- 6576 Sandy fields, Sea Coast, Noyo. ^{indig. 65}
- 6577 *Pellaea* Rocks Elk Ridge
- 6578 *Adiantum* Swamps at Red Mt
entirely unshaded station
forms immense high tufts.
- 6579 *Garrya* Low shrub Red Mt
- 6580 Swamps Red Mt
- 6581 *Juncus* Swamps Red Mt
- 6582 *Cyperus* Lambert's Lake
- 6583 *Luzula* Deep Gulch Noyo.
- 6584 *Juncus* Ponds near Elk Ridge
- 6585 Dry hill sides near Elk " "

6586. *Salix* Large shrub, sometimes
tree in Russian R. bed at Clover
dale June 6th
- 6587 *Iris* common on Red Mt.
- 6588 *Linum* hills at Cloverdale
- 6589 Cloverdale, dry hills
- 6590 *Lobelia* ?? Lambert's Lake
- 6591 *Campanula* ?? Swamps at Noyo
- 6592 *Ceanothus* fls. blue, stalks long
slender; open woods Humb. Co.

-
- 6573 Mission hills 9/4
- 6574 *Orthocarpus* Marin Co 1/5 67
- 6575 *Carex* Bean's Ranch near
Santa Cruz 9/5 67.

6070! Hieracium macrophyllum Thurb. (in Report. Cal. State Survey.)
Col. Munro declares it to be borealis.
... .. distinct species, as aside from

Bolander's Names

Collection of Hb.

Copy of notes sent Doc. Gray Feb 27th.

Bolander's list & his notes are copied.

My notes are put in [brackets] p. 7.

from -
6469. 6109. 5078. 6099. 4865. 4692. Stipa Viridula ...
It is possible that a more lengthened examination
might be able to find some constant differences
[Some specimens have a very slender and much elongated
panicle but I think them all rightly referred] Yosemite Valley
& Big-tree Grove.

6070! Hierochloa macrophylla Thurb. (in Report. Cal. State Survey.)
Col. Munro declares it to be borealis.

[This seems to me to be a distinct species, as aside from the very large leaves (12'-18' long & 4"-6" wide) the glumes are always strongly 3-nerved & greenish (never becoming brown), very obtuse, and barely equalling the sterile florets, which are notched at the broad apex, & often with a mucro or short awn. Should be compared with H. repens, Host. which is generally referred to H. borealis.] Redwoods, Marin Co.

4840! Panicum dichotomum Scribn. Yosemite Valley.

6127! Panicum sanguinalis L.

4802. Stipa setigera Presl. fide Col. Munro.

Steudels description agrees with it as perfect as could be expected from any description. Prof. Thurb. however calls it St. Eminens Cav. (see my sets publ. before).

[I find no number 4802, in either Brewers set or in that of the State Survey. In the latter set are very fine specimens of S. setigera, with the copious panicle beautifully tinged with purple; these have no number, and are marked "Stipa Eminens, Monte del Diablo 0/4" I have not his previously published set of grasses & do not know what I then called S. Eminens. The chief distinction between the two is that one has the palea hairy all over, & the other only partially so.]

5020! 5038! Stipa occidentalis Thurb. (in Rept. Cal. Geol. Survey, in) [a very distinct species with a plumose awn, which I first met with among the grasses of the U.S. Geol. Exped. from Oregon.] Yosemite Trail, alt 8000 ft.

6469. 6109! 5078! 6099! 4865! 4692! Stipa Viridula Trin

It is possible that a more lengthened examination might be able to find some constant differences

[Some specimens have a very slender and much elongated panicle but I think them all rightly referred] Yosemite Valley & Big-tree Grove.

6116! Stipa Richardsonii Link ???

2

[The contracted panicles, long upper palea, caducous
anthers and short vaginula do not agree with the descr.
of S. Richardsonii, but do with that of S. Sibirica of
Lamanché. I have no specimens of either plant
compare, also with Ledeb. Icon. Fl. Altaic. t. 99]
Mons Pass. alt 8000 ft.

6097! Stipa Kingii Bol. sp. nov.

In honor of Clarence King my gallant chief in
the exp. of 1866 across the Sierras.

[A very pretty species allied to S. mucronata, from
which it is distinct] Upper Tuolumne Meadows, alt 7700 ft

6096! Vilfa (Sporob.) ramulosa H. B.

[Sporobolus ramulosus Kunth.] Mons Lake.

6095! Vilfa (Sporob.) asperifolia Nes et Mey.

[Sporobolus asperifolius, Nes & Mey. - with smoother foli-
age than I have before seen] Mons Lake.

4836! Vilfa airoides, Trin

[Sporobolus airoides Torr.] San Joaquin Valley, June

6092! Vilfa depauperata Torr.

[The form labelled by Nutt in Herb. Acad. "Sporobolus
nudus"] Yosemite Valley.

6091! Vilfa (Sporobolus)

[Vilfa depauperata Torr. var filiformis.]

Bremer collected this in the Sierra Nevada & I then
put it with V. depauperata - and on examining it now
I can do nothing else with it. It is just the
Sporobolus filiformis Nutt. Herb. Acad. V. depauperata
was founded upon a very diminutive specimen; it varies
greatly, & the largest form has been called V. utilis
by Torrey. We must either regard the present as one
of its forms, or make a half dozen or more

new species. Many flouts in this have a distinct 3
nucro, but it is not constant.] Yosemite Valley,
6124! Vilfa

[Vilfa rigens Trin.? I had this a long while ago
from Blake & Bolander. The best I can do with it
is to refer it as above. It does not quite agree
with Trinens' figure (Trin. Icon. t. 250.) but the differ-
ences are not so great as between his descriptions
in the Icones & in his Agrostiden.] Lomom.

6472! Agrostis canina Lein.

The flowers of my specimens are larger than in the
Sp. I pursep from other parts of the world. (No locality)

5070! Agrostis exarata, Trin. Alpine form.

River bed of Upper Toluca all. 10,000 ft.
6105! 6078! 6079! 658 of Breuer and May No 42, No 5, 36, 18 of
my grass sets belong to Agrostis exarata Trin. This sp.
includes Agrostis microphylla Steud.

6102! Agrostis Hillebrandii Thurb. (Rept. Cal. Geol. Surveying)

Muriposa Big Trees.

4801! No 34 of set. Agrostis pallida DC. fide Thurb.
Goel Munro makes it Agr. viscosus & breve H.B.
I have carefully compared different descriptions
Stendels & Kunth's in his suppl. Both are at variance
in some important points. Prof Thurbler's determin-
ation I like better, though my Europ. specimens are
much smaller. Anderson Valley. Coast.

6465 Agr. pallida DC.

6465 b. same, but smaller.

6103! Agrostis vulgaris - With

4954! seems to be a sickly state of Agr. vulgaris.

6107! 6106! 4842. Agrostis scabra Willd

5064! Agrostis. I shall leave this to you to decide. 4

[Agrostis very like with Agrostis Lecontei, Trin. but has more rays to the panicle - Please compare] No loc.

6466. Agrostis. May be omitted until I can procure better specimens

6093! Muhlenbergia gracilis Trin. Yosemite Valley.

6090! Carex arundinacea ~~Blas~~ pendula, Trin.

[C. arundinacea Trin. v. pendula, Gray. I have not before seen this from California] Big tree Grove.

6082! Polygonum Monspeliensis Desf.

6083! Gastidium australe Beauv.

6094! Vaseya comata Thurb.

[Remarkably fine specimens some 2 1/2 feet high with purplish panicles & the culms more or less tinged. No locality given]

6084! 4762! Calamagrostis Aleutica Bong. [Trin.]

6098! Calamagrostis Breweri Thurb. (in Rept. Cal. Geol. Survey ined.)

[One most delicate species; first collected by Prof. Brewer in Aug. 1863. Near the summit of Carson's Pass. Alt. 8000 ft. & by Mr. Bolander in 1866 in the meadows of the upper Truckee. Alt. 9700 ft.]

6088! 6087! Calamagrostis Canadensis Michx.

6470! 6071! Cal. sylvatica DC.

Calam. stricta not numbered, but occurs in Yosemite V. and the higher sierras.

6471! Calamag. next likely to occur.

[My specimen of C. varia is a very poor one - indeed I am none off in Calamagrostis than in almost any other large genus - If new - and I am inclined to think it may be, call it C. Balandieri Thurb. & keep the name for another]

4787. 4766! Calamagrostis Lappomiana Trin 5
[Bolander in one of his notes seems to be quite satisfied
with his determination - I have only one very young
specimen of C. Lappomiana.]

6112! 6071! Aira caespitosa Scribn. fide Col. Munro.

Aira elongata - no number

6072! Aira danthonioides Trin

4758 { loose panicles forms of Frietum cernuum Trin
4744! { compact

[This I at one time took to be a form of F. cernuum,
but was not satisfied with it. The excellent species
in this lot convinces me that Nuttall was right
in ~~not~~ calling it a new species; it is F. elatum
Nutt. in Herb. Acad. and the same which Buckley
(supplanting Nuttall's name) called F. canescens. Whether
priority of publication makes it in this case necessary
to adopt that theiving fellows name I can't say.
It is intermediate between F. cernuum Trin & F. flavesens.
It is intermediate between F. cernuum Trin & F. flavesens.
It differs from the former in its more dense &
strict panicle & its much longer & narrow lower glume.
Its hairy ovary & more robust habit distinguish it
from F. flavesens.]

5019! Frietum subpraetense, var muticum Bol.
There seems to be but little doubt that these sp.
must be referred to this species.

6104! Danthonia sericea Nutt.

4705! Poa brevifolia Muhl.

[Judging from the description & Reichenbach's figure it
will do for Poa cerisia All. of which I have no
specimens. I certainly is not P. brevifolia Muhl.]

6113! Atropis californica Munro.

5073. 5068! 5076! Poa alpina, Le.

6115! Poa sylvestris, Gray.

[Probably this species with the pulvinate leaf persistent } "Olden"
specimens agree very well with those sent to me by Dr. Engel.
Bolander.

6014! Poa leptocoma, Trin.

[This is the same as Purry's No. 376. referred to Poa
arctica (doubtfully) in the enumeration. I cannot at
present do any better with it. Poa leptocoma is
described as with woolly glumes } Higher Sierras.

6126! Eragrostis pectinoides, var. megastachya

6125! Eragrostis pilosa, Beauv.

6074! Bryopyrum Douglasii, Hook.

5026. Glyceria pumila, Bol. (6111!)

6108! Glyceria fluitans, R.Br.

5044! 6114! Glyceria airoides Thurber.

Glyceria serrata. Not numbered.

6075! Leptochloa californica Nees

6076! Milium imperfectum Trin.

6119 or 6120! Melica pumila, Nutt. This form was
also collected on Mt. Dana.

6121! Melica pumila var. inflata Bol.

6119! Melica pumila var. bromoides Bol. No 40 Sets.

4698! Melica pumila, var. ^{acuminata} laevicarpa Bol.

Melica stricta Bol. No. 47 of Sets.

Melica pumila var. breviaristata Bol.

(my number 53 of Sets) Redwood, Humboldt Co. 67. also
at Santa Cruz. Col. Munro considers this a new sp.
of Melica & Prof. Thurber left it undetermined.

4861! Melica aristata. Sp. nov.

6118! Festuca microstachys var. ciliata

6073. Festuca paniculata, Thunb.

6100! 5067±5066! Fest. violacea, Gand.??

[This is called F. rubra in Parry's Rocky Mt. plants & is the F. rubra of Bourgeois collection. Benthams puts F. rubra under F. ovina & very properly as I think. This should be F. ovina var. rubra or violacea if it more nearly resembles that form.] alt. 11,000 ft.

6085! Elymus condensatus Reel.

6080! Elymus Sibiricus Lo.

5023! Triticum caninum, Scrib.

[This is what I have called, from description only, Triticum violaceum Hornem. - vide Anderson Gram. Scand. p. 5 - we have no root to these specimens]

6468 Triticum aegilopoides
could it be T. dirigenz of Gray.

[I have no specimens in either Brewers' or the States - Set]

[Boulanger speaks of an undetermined Festuca. "It is the last Festuca in my sets and 4704 of late". In either case I have no specimens to identify it by, though I probably have it from Brewers Collection - 4669. is a Lepturus which he speaks of working out. So I will leave it for him. It is quite distinct from Le. paniculatus in its simple spike, the position of its glumes, armed pulvin with a tuft of hairs at the base, &c - It should be compared with Le. paniculatus (Gott's species)]

6110! Triticum repens mixed with T. aegilopoides Gray

2^d Set of Grasses - from California state during
1525-2493

Scirpus oxyoides Sw.

Snake Creek - Bolander 2418.

Phalaris intermedia Bosc.

Drumps San Francisco Bolander, 2287.

An unusually large form with large branched culms
4-5 ft high + branching from the lower nodes. The
spike narrow + interrupted. 2 lines almost - same
growing from base.

Holcus lanatus L.

Drumps San Francisco - Bolander 2270.

Det.

Hierochloa

Redwoods of Marin Co. - Bolander. 2279.

Beckmannia Ernaeformis Host.
Oakland Hills - Bolander. 2289.

Paspalum distichum L.
Clear Lake - Bolander 2417.

Panicum capillare var *major*.
In garden, Colorado Valley Dr Cooper 2228 - Virginia City
Nevada Terr - Bolander H. Bloomer. 2265 - Clear Lake
Bolander 2420 - -

A variety common from west of Rocky Mts & on Pacific coast
The panicle has strong rays. Spikelets $1\frac{1}{2}$ lines long, acuminate
& usually short pedicellate.

Panicum Grass Galli.
Colorado Valley. Dr Cooper 2227 - Snake Creek, Bolander 2419.

Panicum dichotomum L.
Dry sandy soil in Yosemite Valley at 4,500 ft. Alt. common
on sand & among rocks - Dr. Hillebrandt Brewer 1846.

it form corresponding with *L. nitidum* Lam. No. 2169 collected by Prof. Brewer around the hot springs south east of Suisun Peak is probably a form of the same but the specimens are too imperfect for accurate determination.

Eriocoma cuspidatum Nutt.

Top of Providence Mt. & west to Cajon Pass. 2223 DeLooper.

Stipa occidentalis Thurb.

Virginia City, Nevada Terr. H. G. Bloomer. 2261-

Add descr.

Stipa setigera Benth.

San Francisco - Bolander 2280, San Diego Dr Cooper 2233
The last with nearly naked culms - review this!

Stipa viridula Trin.

Big Trees, Calaveras Co. Dr Hillebrand. 2255-
a form with elongated panicle

Aristida Canadensis Thurb.

Fort Mohave Dr Cooper. 2217

Add descr

Agrostis scabra -

Calaveras Co. Dr Hillebrand 2249 - 2250.

Agrostis verticillata

San Francisco - Bolander. 2294.

Agrostis asperifolia Trin?

San Francisco Bolander 2272 - 2286 - 2295-

all these forms without arms - No 2268 by H. G. Bloomer
Nevada Terr is probably a young & smooth state of the same.

Agrostis vulgaris Atterl. (Hultén)

San Francisco, Bolander - 2271.

Agrostis exarata Trin

Various forms, San Francisco. Bolander. 2493, 2278,
2282, 2283, Calaveras Co Dr Hillebrand, 2248.

Agrostis surina Trin?

Calaveras Co. Dr. Hillebrand. 2247.

Agrostis

San Francisco

Calaveras Co. Dr. Hillebrand - 2251.

Add descr

Phleum pratense

Swamps S. Francisco. Bolander 2290 - Calaveras Co -
Dr. Hillebrand - 2243.

Phleum alpinum.

Head of Tuolumne river Brewer 1765. Silver Valley, Brewer
1965. Silver Mountain Brewer 2073. Calaveras Co. Dr
Hillebrand 2242.

Alopecurus geminatus

var *aristulatus*.

Virginia City, Bloomer 2260.

Polygala monspeliensis

Camp Gady Mohave River Dr Cooper. 2220.

and var? fragar.

Sporobolus asperifolius Nees & Mey.
Virginia City Nevada Terr. H. G. Bloomer 2264.

Sporobolus airoides
Fort Mohave. Dr. Cooper. 2231.

Vilfa depauperata Torr.
Sierra Nevada 4000 to 6000 ft. Prof. Brewer. 1st number
This appears to belong species is variable & has a wide range
extending from Oregon to Mexico. One extreme is *V. utilis* Torr.
The specimens are like *V. filiformis* & *V. curvifolia* in Herb. Acad.
— *Arundinaria? lanuginosa* 2237

Phragmites communis
Soda Lake & Niagara R. Cooper 2222. Clear Lake, Bolander 2242

Calamagrostis Aleutica Trin
Oakland. Bolander 2274.
Correct last list

Calamagrostis Canadensis
Calaveras Co. Dr. Hillebrand 2244. & a slender form 2245.

Calamagrostis Breweri —
alt. 8000 ft. —
Valley near Summit of Carson Pass — 2128. Aug Brewer
sent to Gray.

Pleuraphis — sp. *rigida*, n. sp.
Fort Mohave — Dr. Cooper 2230 —
grows 4 ft high
add descr. —

Bronteloma polystachya

Grand plain at Fort Mojave, Dr Cooper. 2241

Bronteloma oligostachya

Summit of Pinedone Mountain. Dr Cooper 2226.
"called Buffalo Soap" a name which probably belongs to Buckhorn
This is a very stunted specimen.

Aria (Deschampsii) Caspitoma M.

Big Trees Calaveras Co. Dr Hillebrand 2246.

A form with having blackish purple glumes with scarious margins.
Lower leaves not seen. - Review Aries in other coll. vide H. Ross.

Trisetum subspectum

near Summit of Silver Mountain 11,000 ft. - Brewer 2044 - Aug 5 -
Also in 2002 - not on list & loc not given.

Trisetum subspectum var molle

~~no - 1947 - no loc. & not on list~~
Common on Big tree road. 5000 - 6,000 ft. July 20 -
Brewer 1947 -

Tricuspis pulchella

Fort Ingham - Dr Cooper - 2218 -

"Stropis Californica" Munro in Herb.

S. mon Pass. - Brewer 1922 (2077? but too poor to determine)
Silver Mt. 8000-9000 alt. - Brewer 2078 Yosemite trail 6000-7000 alt -;

Brewer 1625 - (2003 no loc.) - San Diego. Dr Cooper 2240, & 2232 -

2242 Oakland Bolander 2292 - (2004 no loc.) Carson Pass Brewer 1959.

Virginia City Nevada - Bloomer 2267, 2266, 2269 -

See notes to last list. I think the numbers quoted along there
though the specimens vary greatly, yet not more than other grama
which have a wide range in altitude & difference of situation

Poa annua -

San Diego - Dr Cooper - 2238 -

Poa trivialis
Mila San Francisco Bolander 2277.

Brizopyrum spicatum
saline soil on the islands in — (Mona??) Lake - 6,500 ft alt. - Brewer
common on saline + alkaline soils at various altitudes

Brizopyrum spicatum var. *strictum*
Brush at Soda Lake - sink of the Mohave
Slevoster 2221.

Melica roseoides Nutt
Virgin in City Nevada Terr - Bloomer 2262 - San Francisco
Bolander 2281. In Bloomer specimens some nuts as large
as a hazel nut.

Melica Nevadaensis S. Nov.
Dry rocks at Carson Pass at about 7000 - 8000 ft. alt.
seen much higher. July 21st Prof Brewer 1921.

Glyceria princeps Nutt
San Francisco - Bolander 2273.
seems like the same from Berkeley mts.

Glyceria nervata Trin.
Scandinavian - Canon 7000 - Aug 6 - Brewer 2061 - Big Trees, Calaveras Co
Dr. Hillebrand, 2252, 2256. The last ~~mountain~~ locality furnishes
specimens with rather large spikelets.

Festuca ^{microstachys} passiflora Nutt.
Oakland Hills Bolander 2276 - 2291 - 2229

Festuca ovina
San Francisco co. Bolander - 2296

Festuca parviflora Hunt. - *occidentalis* Hook. f. - *F. parviflora*
+ *F. remotiflora* Steud - Oakland Hills Bolander 2293. Specimens are ^{in habit}

quite like the original ones collected by Douglas. Bolander 1507
of the former collection is a very luxuriant form of the
same.

Festuca sp. n. S. Paeveken -

sp. with hairy rays - Bolander ^{Virgin City} Nevada City Nevada Terr - Bloomer
2259 -

Festuca - too old to determine
Dry hills above Silver Valley - 8000 ft. July 31st - Prof. Brewer 1976.

Bromus ciliatus L.
Big Trees Calaveras Co. Dr. Hillebrand. 2258

Bromus ^{brevistylus} ~~brevistylus~~ ~~curvatus~~ Hook & Arn
San Diego, San Diego. Dr. Cooper 2235 -
seems to be *hordeum* plant if that is a species.

Bromus ~~varius~~ ^{curvatus} curvatus Hook & Arn.
a solitary broken stemmed specimen of what is probably the if it is a species.
San Diego - Dr. Cooper - 2236 - Characteristic spec -

(*Bromus* 1542 of lost collection a form of *B. ciliatus*?)

Bromus ciliatus var -
in var. with a short dense panicle such as we have from the
Berkeley mts. - San Bernardino mts. Trails 5000 ft. Brewer 2088 - Aug 7.

Boerhaavia ^{florosa} ~~florosa~~
Swamps, San Francisco - Bolander 2288. Very luxuriant
specimens -

Hordeum murinum
San Diego. Cooper 2239

Hordeum pusillum Nutt.
Gravel Hills San Diego, Dr. Cooper 2234 -

Friticaria ^{curvata} ~~curvata~~ (B. Gravelis) Ledeb.
near summit of Carson's Pass 800 ft. Aug 16 -
Brewer 2118.

Triticum violaceum Horneman - Anders. Gram. Scand - tent.

T. repens var. purpurascens Hook -

Very dry places 8000, 9000 ft - Aug 7. ^{but longer and} like but fruit
Brewer 2068 - Agrees with Hooker's sp. but no sign of a
creeping rootstock & cannot be repens -

Triticum Caninum L

^{culmatus Gr.}
Big Trees, S. Hillbrand 2257

Situnium Elymoids

Dry Hill sides, Carson Pass 9000 ft - alt - Brewer 1958 - stem like but
grain 8000-9000 - alt - Brewer 2072 - Provedent but - Cooper - 2224.

Elymus condensatus - Reel -
often 7 ft. high - Mona Lake - dry soil. 6000.-7000 - Brewer 1892
Hooker gives - best grass there - Dr Cooper 2219 = (some specimens with
roughened paleae) A slender form with a reduced spike - Fort
Point, S. Frisco - Bolander 2275 -

Elymus Sibiricus -

Marin Co. very large Bolander. 2284 - San Francisco Bolander
2285 -

Dr. George Thurber's list of his
determinations of the grasses of the
California State Survey.

List

1625-249.

1625 *Atropis californica* Munro.

46 *Paricum dichotomum*

1765 *Phleum alpinum* L.

1842 *Elymus condensatus* Presl.

46 *Brizopyrum spicatum* Hooker

1921 *Melica*

22 *Atropis Calif.*

47 *Frietum sulspicatum* von Wulle.

65 *Phleum alpinum* L.

76 *Festuca* ? too old.

98 *Litanion Elymoides* Presl.

99 *Atropis Calif.*

{ 2002 *Frietum sulspicatum* Beauv.

2003 } *Atropis Calif.*

2004 }

These three numbers are not on Prof.
Beauv's list.

2044 *Frietum sulspicatum* Beauv.

61 *Glyceria nervosa* Fris.

68 *Friticum violaceum* Hornem.

72 *Litanion Elymoides* Presl.

73 *Phleum alpinum* Fris.

2077 *Atriplex Californica*?

78 " "

88 *Bromus ciliatus* var.

2118 *Friticum Caninum* B. Griseb. Ldb.

28 *Calamagrostis Breweri* n. sp.

69 *Panicum distachyum*, var.

2217 *Aristida Californica* Thurb. n. sp.

18 *Ficus pulchella* Torr.

19 *Elymus condensatus* Presl

2220 *Polygala monspeliensis*

21 *Brizopyrum spicatum* var. strictum

22 *Phragmites communis* Trin

23 *Eriocoma cuspidata* Nutt

24 *Sitonia Elymoides* Raf.

25

26 *Bouteloua oligostachya* Torr.

27 *Panicum Crus-galli* L.

28 *Panicum capillare* var.

29 *Festuca microstachys* Nutt

2230 *Pleuraphis rigida*. n. sp.

1 *Sporobolus airoides* Torr.

2 *Atriplex Calif.*

3 *Stipa setigera* Presl.

4 *Hordeum pusillum* Nutt

2235 *Bromus brevioris* Tutin

36 — *virens*

37 *Rotula strummaria* - leaves only -

38 *Bromus annuus* L.

39 *Hordeum murinum*

2240 *Atriplex Californica*

41 *Bouteloua polystachya* Torr.

42 *Phleum alpinum*

43 — *pratense*

44 *Calamagrostis Canadensis*

45 — — — — — slender form

46 *Stipa caespitosa* var.

47 *Agrostis* ^{varia?} ~~spicata~~ Trin

48 *Agrostis scabra* ~~scabra~~ Trin

49 — — ~~scabra~~

— — ~~scabra~~

2250 — — — — — if new sp. nov.

51 *Agrostis Hillebrandii* sp. nov.

52 *Glyceria nervata* Trin.

53

54

55 *Stipa viridula* Trin

56 *Glyceria nervata* Trin

57 *Friticum Caninum* L.

58 *Bromus ciliatus* L.

59 *Festuca* n. sp.

- 2260 *Alopecurus geminatus* var *aristatus*
 61 *Stipa occidentalis* Thurb.
 62 *Melica pumilio* Nutt
 63
 64 *Sporobolus asperifolius* Des & Mey.
 65 *Panicum capillare*
 66 *Atriplex Californica*
 67 " "
 68 *Agrostis asperifolia*
 69 *Atriplex*.
 2270 *Holcus lanatus* L.
 71 *Agrostis alba* & *bulgaris*
 72 — *asperifolia*
 73 *Glyceria paniculata* Presl
 74 *Gulm. agrostis* Aleutica
 75 *Elymus condensatus*
 76 *Festuca microstachys*
 77 *Poa trivialis*.
 78 *Agrostis spicata*
 79 *Hierochloa macrophylla* Thurb.
 2280 *Stipa heliopsis*
 81 *Melica pumilio*
 82 *Agrostis spicata*
 83 " "

- 2284 *Elymus hibernicus*
 85 *Agrostis asperifolia*
 86 *Agrostis asperifolia*
 87 *Phalaris intermedia*
 88 *Leolinia perenne*
 89 *Beckmannia erucaeformis*
 2290 *Phleum pratense*
 91 *Festuca microstachys*
 92 *Atriplex Californica*
 93 *Festuca paniculata* Thurb
 94 *Agrostis verticillata*
 95 — *asperifolia*
 96 *Festuca ovina*
 2417 *Paspalum distichum*
 18 *Leersia oryzoides*
 19 *Panicum crus-galli*
 20 — *capillare*
 21 *Phragmites communis*
 2493 *Agrostis spicata*.